METHODIST

COLLEGE OF
ENGINEERING & TECHNOLOGY
OU

Estd : 2008

Yanthra

We keep the world in motion...

Annual Department Magazine
2018-19

Department of Mechanical Engineering

Methodist College of Engineering & Technology
King Koti Road, Abids, Hyderabad

CONTENTS

Message from Mr. K Krishna Rao, Secretary and Correspondent

I am happy to know that the Mechanical Department has come up with their own magazine YANTRA. I hope that the students & faculty alike will be inspired & encouraged to excel in their academics, now that there's a platform to record & publish their achievements for future.

Technical Education in Telangana is passing through one of the most critical periods. Rapidly changing technological environment at global level and ever developing demands of the students pose a two-fold problem to the institutions:

- Anticipating the thrust areas of the future.
- Equipping the institutions with necessary infrastructure and trained faculty in consonance with ever changing demands.

This is indeed a challenging task. Understanding this imperative, at Methodist, we always lay emphasis on infrastructure building and recruitment of talented resource persons to meet the requirements of curriculum and the demands of the industry.

A special team of professors at Methodist has been given the responsibility of closely following the industry and their requirements, and assessing the changes that are likely to take place in near future. The idea is to enhance the student's preparedness to meet the requirements of the market once he finishes the course. The management, teaching & non-teaching staff of Methodist reiterates their commitment to impart constructive and meaningful education.

I hope the mechanical department continues to keep up with our expectations.

Message from Dr. M. Lakshmipathi Rao, Director

It gives me immense pleasure to extend a warm welcome to all the stakeholders to Methodist College of Engineering and Technology. Our institution is affiliated to the prestigious Osmania University which is more than 100 years old. Since its inception in 2008, the institute has not only grown up in its infrastructure but has also developed a lot in terms of academics, co-curricular and extra-curricular activities as well.

A well-balanced curriculum under Choice Based Credit System, taught by qualified, competent and experienced faculty, develops the required skills in students necessary to meet their aspirations. We are in a continuous process of updating our laboratories to meet the demands of the rapidly changing engineering fields.

In addition to the curriculum, the institution gives paramount importance to develop soft skills, communication skills, interpersonal skills etc. for the personality development of the students. We at Methodist also concentrate on inculcating human values and ethics.

Engineering education involves a lot of conceptual approach along with clear fundamentals, coupled with a good practical understanding, to deal with real world problems effectively and efficiently.

It's my personal belief that if good quality education along with all the necessary skills, is imparted to the students, it is assured that they will definitely succeed in their lives and meet their dreams and aspirations. The highly motivated youngsters on the campus and well settled alumni are a constant source of pride.

Message from the Principal - Dr. Ravinder Reddy

The mind is not a vessel to be filled, but a fire to be kindled." Said Plutarch.

I am happy to see the enthusiasm of the faculties & students alike, who have come up with this Department Magazine. I am sure it kindles the imagination of our learners. Cradled in the lap of nature on the one hand and archeological edifice on the other, swaying from serious thinking to playful inventiveness, all our students are brimming with a zeal for life empowering themselves with skills and creativity.

I congratulate the staff and students of all faculties who used various mediums of expression to present their ideas. As long as our ideas are expressed and thoughts kindled we can be sure of learning, as everything begins with an idea.

I appreciate every student who shared the joy of participation in co-curricular and extracurricular activities along with their commitment to curriculum. That little extra we do, is the icing on the cake. 'Do more than belong participate. Do more than care – help. Do more than believe – practice. Do more than be fair, be kind. Do more than forgive – forget. Do more than dream – work.'

Just as our mother earth gives us more and more, I hope we will continue to enable our learners to give and get a little more of learning

Message from the Head of the Department, Dr. A Rajasekhar

The Mechanical Engineering Department was established in the academic year 2009-2010.

Currently the department offers one under graduate program, B.E in Mechanical Engineering, with an intake of 60 and one Post Graduate Program, M.E with specialization in CAD/CAM with an intake of 18 seats.

The Department is recognized as "RESEARCH CENTRE" by the Osmania University and currently 8 Ph. D. Scholars are doing their research work under the supervision of 2 Professors of the Department.

Majority of the faculty are having varied experience of industrial, teaching and research which help to serve the students in exposing them to the industrial and research environment. The students of the department have excelled in academics and bagged three gold medals from Osmania University in 2014, 2017 and 2018.

The department is associated with professional bodies such as Society of Automotive Engineers (SAE), Indian Society for Technical Education (ISTE) and Indian Welding Society (IWS) under which various activities are taking place.

The department organizes various student level technical events. The faculty and students keep taking part in activities & events at local & national levels. We always felt a need of publishing these achievements for all the stakeholders. With that intention we had started publishing the quarterly newsletter.

With Yantra we are expanding the scope of the newsletters to include the creative & extra curricular side of our students & faculty. I hope that the magazines & newsletters will together work for the benefit of the teaching-learning community and keep all the stakeholders updated.

Department of Mechanical Engineering

Vision

To be a reputed centre of excellence in the field of mechanical engineering by synergizing innovative technologies and research for the progress of society.

Mission

M1: To impart quality education by means of state-of-the-art infrastructure.

M2: To involve in training and activities on leadership qualities and social responsibilities.

M3: To inculcate the habit of life-long learning, practice professional ethics and serve the society.

M4: To establish industry- institute interaction for stakeholder development

PROGRAM OUTCOMES

PO1. Engineering knowledge: Apply the basic knowledge of mathematics, science and engineering fundamentals along with the specialized knowledge of mechanical engineering to understand complex engineering problems.

PO2. Problem analysis: Identify, formulate, design and analyze complex mechanical engineering problems using knowledge of science and engineering.

PO3. Design/development of solutions: Develop solutions for complex engineering problems, design and develop system components or processes that meet the specified needs with appropriate consideration of the public health and safety, and the cultural, societal, and environmental considerations.

PO4. Conduct investigations of complex problems: Formulate engineering problems, conduct investigations and solve using research-based knowledge.

PO5. Modern tool usage: Use the modern engineering skills, techniques and tools that include IT tools necessary for mechanical engineering practice.

PO6. The engineer and society: Apply the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities during professional practice.

PO9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10. Communication: Communicate effectively on complex engineering activities to various groups, ability to write effective reports and make effective presentations.

PO11. Project management and finance: Demonstrate and apply the knowledge to understand the management principles and financial aspects in multidisciplinary environments.

PO12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in Independent and life-long learning in the broadest context of technological change.

Programme Educational Objectives (PEO's)

The Graduates of the programme shall be able to:

PEO1: Excel as engineers with technical skills, and work with complex engineering systems

PEO2: Capable to be entrepreneurs, work on global issues, and contribute to industry and society through service activities and/or professional organizations.

PEO3: Lead and engage diverse teams with effective communication and managerial skills

PEO4: Develop commitment to pursue life-long learning in the chosen profession and/or progress towards an advanced degree

Programme Specific Outcomes (PSO's)

PSO1: Apply the knowledge of CAD/CAM/CAE tools to analyze, design and develop the products and processes related to Mechanical Engineering.

PSO 2: Solve problems related to mechanical systems by applying the principles of modern manufacturing technologies.

PSO 3: Exhibit the knowledge and skill relevant to HVAC and IC Engines.

ME CAD CAM

PROGRAM OUTCOMES

PO 1: Demonstrate and apply the knowledge of CAD/CAM Simulation tools and techniques to address problems related to mechanical engineering.

PO 2: Independently carry out research /investigation and development work to solve practical problems

PO 3: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO 4: Write and present a substantial technical report/document.

PROGRAMME EDUCATIONAL OBJECTIVES (PEOS)

PEO 1: Become a source of innovative solutions to complex problems related to computer aided design, simulation & manufacturing, and pursue a successful career in the field of Mechanical Engineering.

PEO 2: Apply modern computational, analytical, simulation tools and techniques to address the technical challenges in manufacturing industries.

PEO 3: Work individually and also in teams; gain trust and respect of others as an effective and ethical team member.

PEO 4: Development in the chosen profession by continuously updating the knowledge and progress towards an advanced degree.

3D PRINTING

Article Submission
Name: BUDIDA VYSHNAVI
Roll No: 160717736337
Class / Sem: II Year

Lately, we may have listened to many cries about 3D printing & 3D printers, & immeasurable intelligence here effective technology, which must be approximately toward more extended than 30 years has done quickly also advancing entertainment revolutions identical, standing addressed by remarkably essentially the catalyst for the "third industrial revolution".
Among this during understanding, you're reasonably wondering, "what is 3D printing & how does a 3D printer works?" you might also be asking "what can I do with a 3D printer?" In this presentation, we'll teach you the printing basics you need to know to start using this incredible technology to your advantage.

In the late 1980s, Rapid Prototype Technology extended to encourage manufacturers to explore a product before it was published concerning mass production. To achieve this, all worked Computer-Aided Design (CAD) software that could describe unique Rapid prototyping machines toward how to manufacture any physical objective from the design.

In 1986, Charles Hull patented the 'Stereolithography' Apparatus (SLA), presenting this since 1st creation for the 3D printing, we now know. This machine manufactured components by producing them layer, speeding up the process for prototyping, Hull then co-founded 3D Systems Corporation.

Fused deposition modelling (FDM) is an additive manufacturing technology generally used for modelling, prototyping, and production applications. It is one of the techniques used for 3D printing. The technology developed by Scott Crump in the late 1980s & was commercialized in1990. The term fused deposition modelling and its abbreviation to FDM trademarked by Stratasys Inc.

During the 1990s and early 2000s, 3D printers did hugely costly machines used particularly toward industrial applications. But everything originated to improve in 2009 when the 1st commercially available low-cost 3D printer model was published as a kit to be built by the consumer. Later, multiple companies' 3D printer prices went down and quality up, producing excellent machines for enthusiastic hobbyists also small businesses.

Today, 3D printing is beginning to gain some force. The loyalty and comfort of use of printers are improving every day. While we are still in those ancient days concerning these technologies of every customer viewpoint, unique enthusiasm and excitement around this ground-breaking technology are going nowhere except current as unusual and unbelievable applications for 3D printers are obtained every era!

HOW DO 3D PRINTERS WORK?
Four 3D printing technologies should know.
Regularly wondered how 3D printers work. 3D printers have many different applications ranging from engineering to design and prototyping. Among so many applications, there are helpful 3D technologies that change slightly, every catering over involuntary requirements or budget limitations.

Four major 3D printing technologies:

- FDM (Fused Deposition Modelling)/ FFF (fused Filament Fabrication)
- SLA (Stereolithography)
- DLP (Digital Light Processing)
- SLS (Selective Laser Sintering)

Fused Deposition Modelling
Plastic filament is melted down and deposited through a small nozzle. The printer draws out one layer at a time and then boosts to the next. This process continues until the full 3D objects are created.

The materials options in FDM printers use strands like plastic called filament. The most conventional material possibilities include PLA and ABS, operative materials like PETG and nylon are becoming increasingly popular. FDM also has exotic filaments injected among materials with materials like metal, wood, or even coffee! Because of its lower cost and minimal limitations to approach related to other technologies. FDM is primarily a selection as hobbyists are also professionals comparatively. FDM can produce moderate levels of specifications and can design objects more massive than those of the other technologies.

Drawbacks of FDM machines have many settings and parameters that need to be modified for optimal print results. The main machinimas of FDM printing also keep it from achieving the same quantity and feature resolution as its laser-based counterparts.

Stereolithography
SLA printers use a liquid resin that is hardened by a UV laser. There are multiple different coloured standard resins. Several functional resins including flexible, castable and dental materials. Liquid plastic into solid objects.

SLA WORKING
A laser traces a pattern onto the liquid resin and hardens it. The object is established, and another layer is preserved atop the last.

MAIN APPLICATIONS
SLA is used most often by professionals and increasingly high-level consumers. SLA is used for applications that require a high level of detail like jewellery, dentistry, and more intricate models.

THE drawbacks of SLA printers can be a bit more costly than many FDM machines. It has smaller build volumes. Complete designs typically demand some post-processing in alcohol and maintenance replacement can be critical than supports from FDM printers.

Digital Light Processing

Instead of using a laser, DPL printers use a projector and cure entire layers at once. Much like the other technologies, the object raises, and another layer by preserved on the top of it.

Material options of DPL printers moreover use a liquid resin; they're more restricted than SLA. Most DLP machines used blue light rather than UV light which limits material capabilities. Several standard DPL resins exist with functional materials emerging.

The main applications of DPL are very similar to those of SLA, though DPL machines typically have smaller build volumes. DPL printers are likewise useful for highly detailed models and sometimes print faster than their SLA counterparts.

Working of SLS is a high-intensity infrared laser selectively metals powdered materials to create a layer. The new powder is deposited above the previously formed layer and the laser melts the powder again to fuse the model.
The drawbackstions in SLS printers can use a wide range of powdered materials also several standard thermoplastics like nylon and polycarbonate. Metals like aluminum and steel. Fully functional mineral parts can also be produced using SLS.
Applications of SLS are typically only available to professional firms because of its high cost. SLS prints are highly detailed and often mechanically superior to those produced by other technologies. SLS is used most often for fully functional prototypes in advanced materials.

Drawbacks:- SLS machines are incredibly costly and reserved almost exclusively for professional printing companies. This machine requires professionally qualified staff to operate the powder used in the machines can be dangerous if mishandled.

RepRap
RepRap is self-replicating and rapid prototyping. RepRap is about making self-replicating machines. The machine creates most of the parts for machining another. It is a notion to create low-cost desktop 3D printers. It came in the format of DIY (Do-it-yourself) kits.

Metallic materials: - Plain carbon steel, Tool steel, Stainless steel, Aluminium, Copper, Titanium, Bronze, Nickel, Aluminates, Etc.
Polymers and polymeric composites: - ABS, nylon (polyamide), polycarbonates, PP, epoxies, glass filled polystyrene, wind form, polystyrene, polyester, polyphenylsulfone.
Others: - sand, ceramics, elastomers, tungsten, wax, starch, plaster.
Biocompatible materials: - Polycaprolactone (PCL), Polypropylene-tricalcium-phosphate, (PP-TCP), PCL- hydroxyapatite (HA), polyetheretherketone-hydroxyapatite.

Advantages
- 3D printing refers to a relatively new class of manufacturing methods that quickly produce physical prototypes from CAD data.
- 3D printing processes use layer by layer addition.
- 3D printing does not require any mole as a precursor to manufacture.
- Multiple parts can be produced in one cycle.
- 3D printing has been used successfully to make parts of various sizes.
- 3D Selfie.
- 3D printing can make parts in biocompatible materials.

Disadvantages

- Complex geometry is not a limitation in 3D printing.
- Poor accuracy.
- Poor finish.
- Less strength.
- Time taking processes.

APPLICATIONS

- Patterns for casting.
- Moulds for casting.
- Patterns for casting.
- Direct tooling.
- Reverse engineering.
- Medical implants by 3D printing.
- Prototype for medical applications.
- Mass customization.

CONCLUSION

It is a combination of multiple technologies. Additive manufacturing performs one of the significant roles in an industrial application before wanting to be manufacturing any part. It takes time, money, if any errors get by the outcomes, we must reproduce another component, getting through additive manufacturing, we will prepare prototype components. The purpose of a prototype is for a perfect fit, reducing the number of assembled parts, time reduction, not required skilled labour, weight reduction, cost of the machine also redeemed, and many more, complex objectives also produce ease. If the machine parts get damaged or broken there is no stock available, but we have a design of a particular component, we will make that damaged part by 3D printing. Is it saving the delay time of the machine? In the feature, every physical component is going to be made by 3D printing but is not a mass production possibility. It takes much time to make an object in 3D printing. This is the major drawback of 3D printing. It is used for customization. In one time we will make more than two components on 3D printing. But we have one more drawback: the environmental pollution while working on 3D printing for some materials toxic gases are realized especially in AC rooms. Automation, IoT, System Integration, Autonomous robots, connection, big data, cloud computing.

Reviews on Movies, Short Films, Series, Channels

Content: Short Film
Name: Sandeep Nune
Roll no: 160717736332
Class/sem: II Year
Title: NENU PAVANI

Personal experience:

My story wouldn't have reached the masses without combined efforts from the team. I learned many things while directing the short film. Like, how to manage the team members. How to get the actors with different mindsets to align with our vision. As a director of the film, I felt I was also acting as a team leader.

I feel that the team leader has to work with the team and guide the team to conclusive work. Many problems came up in the starting stages of shooting.

I took my time to learn to deal with the problems. Every mistake worked as a stepping stone rising us as a team towards success. Sometimes we disagreed about some decisions as well. But in the end, we worked it out. I think when we are passionate about attaining a goal working together & are ready to do anything about it, nothing can stop us from attaining whatever we want.

The level of satisfaction we all gained the day we clicked on the upload button was immense. We had given the world our best.

PAATAM another short film title.
In this short film, I played one of the lead roles in acting. Here my experience it's very interesting. We have to analyze the person, what they are explaining to us and how was the view in his thought that should first be needed to understand.

WHERE YOUR TRAIT STARTS

Most of us think of leadership as an authority. I believe leadership is about taking responsibility and having values. These words have ocean worth of meaning & we can only bear to have a drop of two.

How can we know about leadership? By reading books? Watching inspiring videos? Studying in class? Are these enough to know about responsibility? Absolutely not! Then how to find out?

When you come forward to take charge before a few people, then understand that you are ready to learn for this responsibility.

No one knows where and when leadership qualities start. All it takes is a proper context and time.

Whenever we need a place in a great organization the leadership trait is also a qualification, where does such a trait start? I would like to say in my own words from my knowledge and experience.

What is real leadership all about?
A leader is one who perceives the speculations of the activists in our leadership in any action or context and takes the first step for their betterment.

Leadership: Leadership is the ability to motivate and guide members who are with us in difficult situations.

The philosophy of the leader is his philosophy of believing in him and working tirelessly for the fulfillment of the task given to him. The difficulty of these leaders is also very much involved in the effort to reach the organization's vision and mission. There are basic styles of leadership, according to what I have learned, seen, and done practically.

Trait Transformation Leadership:

Changing that trait means that his leadership qualities are not enough to reach the destination anywhere. A leader who changes himself before for change.

People Welfare Leadership:
Doing things in a way that is acceptable to those under your supervision after discussing with everyone how and what to do. This leadership means that the comfort of those under his supervision is more important than the comfort of his own.

Situational Leadership:
We have seen a lot of such leadership in our daily lives, but at that time we did not know that it gives us a sense of leadership. The feeling and experience that comes with being a leader are that it can be useful in subsequent situations. Let's look for this leadership in the original.

The impact of circumstances or for a section in any program, assigning that task to people with subtle experience until the situation adjusts.

Laissez faire Leadership:
We are familiar with this leadership process. That being said, in my experience, it also exists. Leaders do not see their involvement in this process in the first place unless they feel they need to be involved.

Finally, all of the leadership types I mentioned above are from my experience. Here is where we are not meant to be the same. Because each one has a different style in performing the leadership function.

Train and support:
Many people in our entourage are hesitant to work or do not know what to do. Keep them focused and help to grow or learn in the profession of their choice.

So Understand what kind of leadership trait you are, or which kind of leadership trait excites you. If you know of any greats for this responsibility, let us share it somewhere like this.

Content: Business Corner
Name: Akshay Bharadwaj
Roll No: 160717736320
Class / Sem: II Year
Title : Concept of Franchise.

Concept of Franchise.

Let's start this story of a franchise concept with a common note.
The franchise is one of the creative concepts that help's both the start-up and the investor to grow hand in hand. If you are wondering what is a franchise? let me tell you.

The concept of franchise starts with the company itself , Any brand which has their product serving the consumer will work on their unique selling proposition (USP) which makes them have a competitive advantage over their competitors.This makes the brand more viable to expand their services all around the world.

Let's say there is a Brand XYZ which is based out of Bangalore, India. They can be based out of Bangalore but they can give their brand rights to anyone in India to sell their products and services on behalf of their brand in return of paying a royalty to the brand.

Royalty can be obtained from different modes like

- a part of the cost to be paid for the product sold in the market,
- A share in the profit for the total sale.

So this concept is being used by many organizations to increase their footprints in many parts of the world/country at the same time, keeping the young generation who are keen about starting a business to give an opportunity for them to run a business successfully under their guidance.

In this way, they can be under proper guidance and also run a business without any hassle. This is called franchising.

So first let me tell you about the basics of this.

- The Franchisor: The one who owns the brand and has the right to give franchise.
- Master Franchise: The one who takes the franchise rights of a particular region or a state.
- Franchise: The one who buys the business or brand from the franchisor or the master franchise.

These are the pillars of the franchise management system. And this is how they work,
The franchisor's duty is to sustain the brand value in the market along with keeping up with the competitors and coming up with a new product line.

The master franchise should see that the sub franchises in their territory are keeping up with the brand values and standards and also help the franchisor to set up the sub franchise in their territory

The franchise's work is just to sell the product or service in the name of the brand following all the SOP's (Standard Operating Procedures).

"It's not the idea that generates money for the business.
It's the implementation of the idea which does".

Guess for FUN!

You must have heard of the series of questions which make you guess wrong every time. Here is a similar guessing game. For maximum enjoyment, take your time to guess each question before reading the answer. It's impossible to guess at the first attempt.

Chatur & his friends start a garage but no one visits it.
Why?
. . .
. .
.
They rent the 2nd floor for the garage.

Then they turn it into a general store, still, no one visits
Why?
. . .
. .
.
They continue to use advertisements printed for the garage.

They decide to run a taxi because they love traveling. Still no use!
Why?
. . .
. .
.
His friends occupy all seats.

While on a tour, their engine goes dead. All of them push with full strength but the taxi won't move.
Why?
. . .
. .
.
They are pushing the taxi from all sides.

Frustrated, they plan for a crime together. There's a fault in that too.
What?
. . .
. .
.
They plan to send the victim home to bring Ransom money.

But, the plan actually succeeds!
How?
. . .
. .
.
They kidnap Chatur's father – Mahachatur.

A poem "Padave 'o'manasa"

'O' Mind , let us go, praying God every minute ,
to touch the lotus feet of God. You do not have
peace of mind & enough courage,
Fear not, let us go, you will get the fame, your
good manners & courage will help you to get a good name.
'O' Mind see the plight of me & the unhappiness.
You are becoming dull by not thinking about it.
See me, listen to my requests & let us go fast
to pray to God to pardon our sins.
Inner soul also is crying, resulting in
shivering heart & shivering body.
God will bless definitely for mind's
stability & enlightenment. Without any further thinking
show your humbleness & fall at the feet of Lord.

Translated to English by Dr. U S V Prasad
From the original telugu work of
Dr. M Sridhara Murthy garu (his maternal grandfather.)

Torque, the force that rotates

Torque : Rotation :: Force : Linear Motion
i.e. Torque creates rotation in the same way as Force creates linear motion.

We push or pull to open/close the door. That means a force can also cause rotation. Then why have a separate quantity for rotation?

The difference? - The same force applied at different points gives different results. But a quantity with a given magnitude must always give the same result.

Relation between Force & Torque
It is found that the product of Force & its Perpendicular distance from a point is proportional to the amount of rotation. The proportionality constant has been chosen as 1 for convenience. Hence

Torque = Force x Perpendicular Distance
Hence it is also called Moment of a Force. In some books Moment of Couple is also used.

Moment?
It is the product of a quantity with its perpendicular distance from a reference point/axis. There are many moments we come across –

Moment of Area = Area x (Distance of its centroid from axis)
Double Moment of Area = Area x (Distance of its centroid from axis)^2
Also called "Area Moment of Inertia"
Mass Moment of Inertia = Mass x (Distance of its center of gravity from axis)

Couple is another name we come across while dealing with rotation.
It is the pure rotational effect produced due to two equal & opposite forces separated by a distance.

I often joke while discussing its meaning. That
"Husband – Wife are equal & opposite and have separate opinions most of the time. But that's what keeps the wheel of life rotating. haha"

Unit? From the formula of Torque
Unit of Torque = newton.meter (Nm)
Don't confuse it with joule, the unit of work.

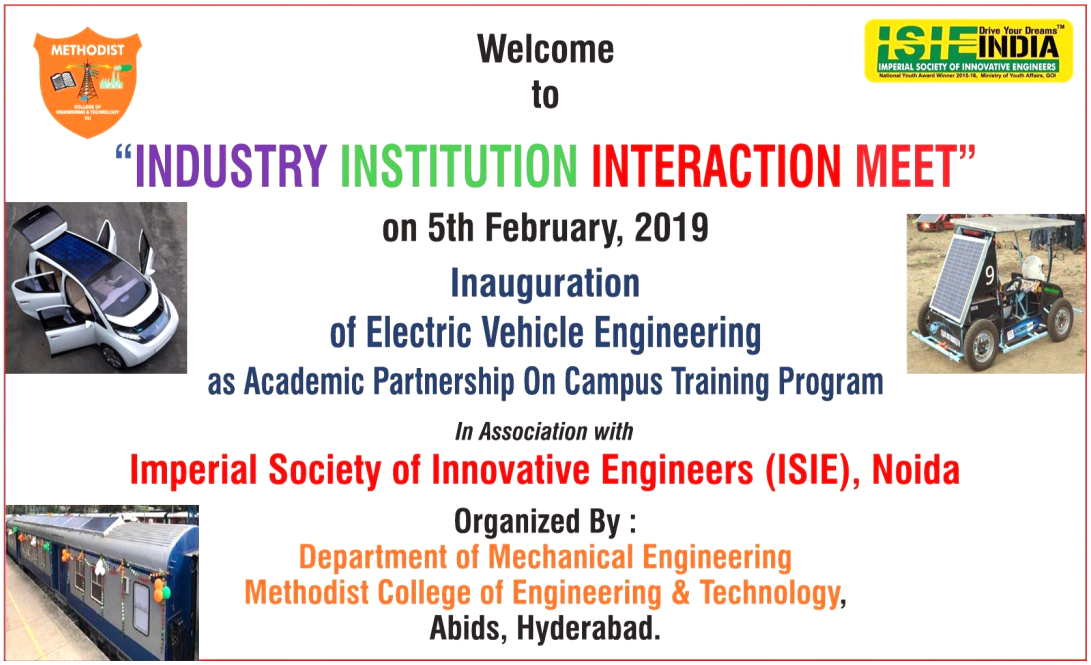
Now a Torque, similar to Force, is a vector quantity. i.e. A direction is also required to define it.

What is the direction of rotation? For rotating bodies a "Right Hand Clasp Rule" is used.

Right Hand Clasp Rule: If the fingers of your right hand clasp are in the direction of rotation, the thumb points in the direction of the vector.

Mathematically, Torque is the cross product of vector-Force & vector-Distance.

INDUSTRY INSTITUTION INTERACTION MEET



The program started out by signing of the MoU and inauguration of the "Electric Vehicle Engineering".

Eminent personalities from industry interacted with the students & encouraged them about getting ready for present & future industries. An interaction session was held later during which students directly got their doubts answered by the panel of experts. It all started with below questions:
"How many are interested in a core job?" & "How many want to be Entrepreneurs?"
The following points were stressed upon them if the students wanted to get selected.

1. Stick to the basics or fundamentals of the subjects. Even if the complete in depth knowledge & theoretical formulation is not known, a general reliable idea of knowing the fundamental concepts would really help.
2. Communication skills play a very important role & this has nothing to do with English speaking or writing. Unambiguous communication of the idea must take place. Which means there must not be multiple meanings gained by listeners for the single idea the speaker wants to communicate. (He demonstrated this by making everyone stand. First he asked everyone to raise their left hand. When everyone did it he asked them to raise the other hand. Some of the students lowered their first hand making his point obvious.)
3. Know your competition: He encouraged them to find the number of engineers coming out every year. The number was revealed at a staggering 15 lakh. He also insisted that the information about the number of colleges & their quality also be found. This would help students to get serious & manage time & energy according to the level of success she/he desires.
4. It was mentioned that there are around 30 disrupting fields which could completely alter the way industries are working presently. Among the leading areas (AR - Augmented Reality, VR - Virtual Reality, IOT - Internet of Things, Big Data, Robotic, AI - Artificial Intelligence, 3D Printing, Mobile, Block Chain)


REDMI NOTE 5 PRO
MI DUAL CAMERA


REDMI NOTE 5 PRO
MI DUAL CAMERA
2018/10/26 10:48


INDUSTRY INSTITUTION INTERACTION MEET


METHODIST
COLLEGE OF ENGINEERING & TECH.

Vidyaan - A story series on Rediscovering Education.

Rahul Shivansh B, 160717736032

A girl is standing on the edge of her college building.
Is she testing her guts or is there a story behind it? Read on . . .
Vidyaan 1.1 Aadi - A girl on the edge
☘️✍🏻☘️✍🏻☘️✍🏻☘️✍🏻☘️✍🏻☘️

Her dupatta was fluttering and so her hair. Standing on the edge of the building she was looking at the campus, it was almost like a bird's view. Everything appeared tiny, and everyone seemed busy like ants. That rush wasn't reaching up here. It was very peaceful here, but Vidya was so much involved in her thoughts...

It was the same place, but the time had rolled back four years into the past. She was with her friends facing a bunch of senior students.

“We can do anything with a strong will!” Vidya roared, and it echoed on the terrace. She was the only one who took a stand to say that and not anyone along with her dared to do so. The seniors burst into laughter.

“Whoa! Gutsy?” one senior said standing up. He looked at his friends & then back at Vidya. “Gyan, what are you up to?” one of his friends asked.
Gyan smirked, “Let me think...”

Another senior tried making a move on Vidya. Noticing this Gyan Warned, “Chatur, you don't want to do that.”

“Gyan is being protective of a girl...” teased Chatur, “Aw... love is in the air!” Listening to this Vidya rolled her eyes. Some seniors giggled and others just glared at Chatur.

“Shush, you moron!” snapped Gyan, rolling his fists and furrowing his eyebrows. “You all know I hate rote learners and you must also know that I hate malevolent people even more.”

“Hey calm down, Gyan.” Chatur insisted with a taunting smile across his face.

“You don't tell me what to and not to do. Okay?” ranted Gyan. He was louder than before. Both stare at each other for a while. Chatur didn't seem to give in.

“You are well aware of what will happen if Guruji knows about this?” warned Gyan.

“Wh...Why bring him into this?” stuttered Chatur with a nervous chuckle. His ears turned pink.

Vidya chuckled as Chatur reminded her of her 3-year-old cousin scared of ghosts.

“What's making you laugh?” fumed Chatur and stomped towards Vidya. But the look on the Gyan's face stopped him from doing so. Chatur exhaled heavily and calmed himself down.

Vidya started to wonder, who Guruji is? She was distracted in her curiosity and drifted into her thoughts. Gyan walked and stood beside her. He screamed into her ear “Go! Stand on the edge of

the building." Hearing this, Vidya baffled for a moment and gathered herself, scowling at Gyan. Slowly she realized there was nothing she could do except for standing on the edge. Her anger now slowly turned into timidness.

"Are you scared, dear?" mocked Chatur with a sweet voice. Chatur's friends laugh as she walked one step at a time and tears rolled down her cheek.

"You rote learners are all the same, Good for nothing!" stated Gyan. "Sticking your head into books will never prepare you for life? EXPERIENCE… is all that matters. Everything else is useless."

Vidya halts 10 feet away from the edge.

"Do what you have been told," orders Chatur and moves towards her again. Gyan gestures to him to be patient.

"It's so high." murmured Vidya. "So...?" Gyan asked, raising his eyebrows.

"I have a phobia for heights," replied Vidya with a low voice, clenching her dupatta.
Chatur burst into laughter but it fainted looking at Gyan.

"You said something earlier right?" mocked Gyan, "Show me your strong will now. Stand there!"

Vidya started sweating and collapsed unexpectedly. And the word "Loser" from Gyan reached her ears as she became unconscious.

"Loser" the word dragged her back to the present. She was standing at the edge of the same college building. There was not a pinch of fear now.

"Brave you are!" a voice came from behind. She ignored the voice and got lost into the gloom. Her face looked as if she had lost a battle.

☘✍ To be continued... ✍☘

What battle has she lost?
Are the seniors responsible?
Who is Guruji?
Is she testing her phobia?
Is she about to jump?
find out in the next edition …

2 Day Workshop on "APPLICATIONS OF MATHEMATICAL MODELING IN MANUFACTURING"

Telangana State Council of Science & Technology (TSCOST) who was the Chief Guest of the inaugural session. In his address, Dr. Puli Ravi Kumar stressed the importance of innovations in technology. He advised the students to come up with new ideas /technologies which will be helpful to rural India. He has informed the initiatives of TSCOST in support of research and innovations.

The applications of mathematics & computing techniques play a vital role in addressing the most challenging industrial problems. Mathematical modeling has spurred a growth in research & applications in many fields of specializations in the manufacturing sector. Further, interest in mathematical modeling has increased with the spread of high powered computers used in most industrial and academic settings. Hence the academic community must broaden its knowledge in application of mathematics to address the current problems faced by the industry.

This program is aimed at exposing the graduate students, researchers and practicing engineers in finding the solutions to engineering problems through mathematical applications in related manufacturing fields. Further they can share their knowledge regarding application of mathematical modeling in manufacturing processes like Casting, Welding, Metal Cutting, Metal Forming & Machine Tools. This program may also help the research scholars in finding the methodologies and solutions to research problems related to their Ph.D work.

STUDENT ACHIEVEMENTS

1. V Sem student Salman Ullah Khan (160714736001) secured University I Rank and won the Gold Medal.
2. IV year student M Sai Krishna Laxman (160715736062) scored 86% in IV years, I SEM for the academic year 2018-19.
3. V SEM student Ravirala Lokesh Kumar (160716736004) scored 8.09 CGPA in V SEM for the academic year 2018-19.
4. III SEM student Shaik Aslam Pasha (160717736071) scored 8.83 CGPA in III SEM for the academic year 2018-19.

SPORTS

1. IV SEM student S Ajay Kanth (160717736010) participated in "37th National Rowing Championship-2018" conducted by 'Army Rowing Node' at Pune on Dec-2018 and stood 7th place in the event 'Open Men's Double Scull(Civilian 2000mts)' and qualified for National Games.
2. IV SEM student S Ajay Kanth (160717736010) participated in "77th ARAE-FEARA ROWING CHAMPIONSHIP-2019" conducted by 'Army Rowing Node' at Pune on Jan-2019 and stood 4th place in the event 'Open Men's Four Skull(1000mts)'.
3. IV SEM student S Ajay Kanth (160717736010) participated in "ALL INDIA UNIVERSITY ROWING CHAMPIONSHIP-2018-19" conducted by 'Panjab University' at Chandigarh from 24th Feb 2019 to 01st Mar 2019.
4. IV SEM student Rahul Shivansh B (160717736032) participated in "ALL INDIA 250K PRIZE MONEY MEN'S TOURNAMENT" conducted by 'ALL INDIA TENNIS ASSOCIATION' at Hyderabad in Nov 2018.
5. IV SEM student Rahul Shivansh B (160717736032) participated in "ALL INDIA UNDER-18 TENNIS TOURNAMENT (quarters)" conducted by 'ALL INDIA TENNIS ASSOCIATION' at Hyderabad in July 2018.

AutoCAD CERTIFICATION

Getting certified in the use of newer technologies always adds to the value of engineering students. On 25/01/2019, twelve students from our department applied and passed the Autodesk User Certification. The online test was conducted in CAD/CAM Lab of Mechanical Department, MCET. The test was conducted through certiport.com in coordination with VOMIT. Questions ranged from objective, matching the entries to those requiring the students to use their AutoCAD skills to draft & determine the distances between certain points.

We are working further on partnering with Autodesk and other such companies for more such certifications in future. Interested students may contact Mr. Srikanth Rangdal, Incharge - CAD/CAM/CAE Lab.

List of all the students who cleared the test

S No	Hall Ticket No.	Name of Student	Result
1	160716736049	Abdul Mohsin	Passed
2	160716736058	Khaja Momnunnudin	Passed
3	160716736066	Nabeel	Passed
4	160716736074	Mujtaba	Passed
5	160716736076	Furqan Areeb	Passed
6	160716736078	Fardeen Ali	Passed
7	160716736082	Md Abdul Mannan	Passed
8	160716736084	Habeeb	Passed
9	160716736086	Syed Faizan Danish	Passed
10	160716736095	Mustafa	Passed
11	160716736096	Syed Saad	Passed
12	160716736320	Syed Talib	Passed

Why do we always seek for perfection?

Choragudi Arun, 160716736013

Some people are really obsessed with perfection. Right from maintaining your house to anything they do. They always want to do everything perfectly.

Agreed! To achieve perfection is very good. But obsession with perfection is not as good. This will get us into a vicious circle of unhappiness. With anything & everything.

> Even science is not perfect. Physicists of the past had thought they would know everything some day. They thought once they discovered all the laws of physics, they could predict anything & everything with utmost accuracy.
>
> But then came the uncertainty principle. It drove physics & its laws into chaos. Measure one quantity with more accuracy & there was found to be more error in other quantities. In other

words, the more accurately they tried predicting what would happen, the more it got disturbed. There is no perfect certainty.

Also, we can't predict nature perfectly. It will always be imperfect. Whether forecasts about rains are just predictions. No technology can measure how many litres of water would pour in what parts. Or how cold the weather will be in degree Celsius.

These are hints for us giving us a very important lesson. Try your best. Don't be possessed by perfection.

Don't seek perfection in others. It may make you miserable. The other person may not be perfect as to your expectations. This will make you see only the flaws. You end up ignoring the positive qualities he carries in others' respects.

Our life is brimful of imperfections. What might seem to be perfect to you may not be perfect in someone else's eyes.

Don't think that nobody can be as perfect as you.

Don't think that nobody can work as perfectly as you.

It will only lead you to arrogance. You'll start criticizing others. You'll stop recognising other people's positive traits. It might spoil your relationships.

Learn to accept the imperfections of life with grace. It will keep you lighter. It will help you give your best to everything. Don't expect a positive response from each & everyone. It will again lead you to dejection.

Whatever you do, there will always be someone to criticise you. There'll always be someone unhappy with you.

LIFE after all, is imperfect. LIVE AND LET LIVE!

Don't expect people to dance around you the way you want. Join the group of dancers & dance your way. People might join you.

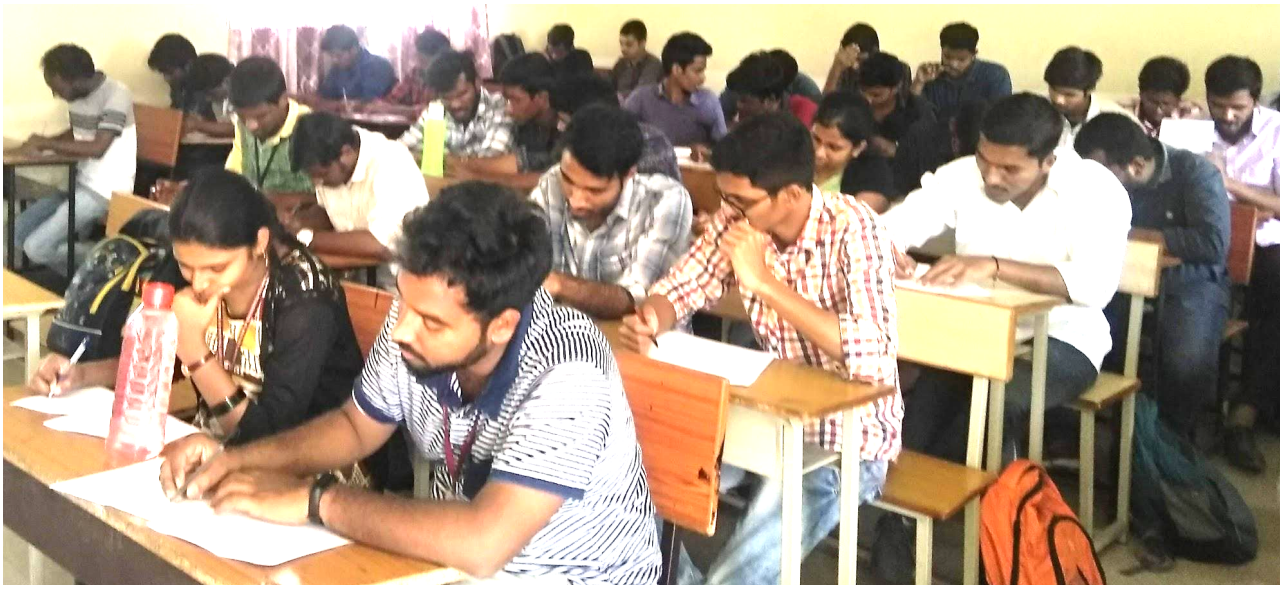
Embrace the imperfections that LIFE has to offer. With open arms & an humble heart.

APTITUDE TEST BY CADD CENTER

There are many professional CAD institutes in hyderabad. CADD center is one of them. It has prepared many students in the field of CAD & helped them get jobs in CAD. We recently had a collaboration with them. As a part of this, they conducted a mock test in the college premises. The results were used to find out the current status of students' abilities & guidance was provided as to which areas the students need to focus to be successful in their career.

A total of Fifty Four students from III & II year attempted the *Aptitude Test* conducted by CADD centre. The aim was to give the students an exposure to the tests conducted during the selection

process so that they could prepare themselves in the coming time. Also, some additional benefits were provided for the students who cracked the test with flying colours.



Date: 21 Feb (Thursday) | Start time: 3:15 PM | Duration of test: 1 Hour | Venue: Block C 206

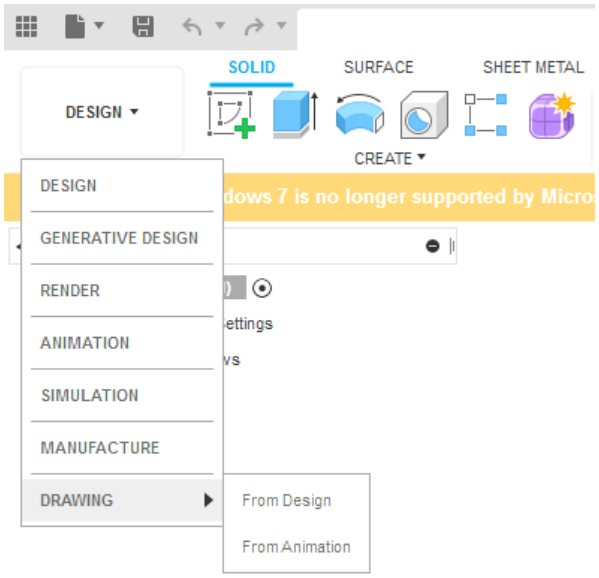
CAD SPACE

CAD or Computer Aided Designing is developing at breakneck speed. Apart from AutoCAD, the most fundamental of the CAD software and the likes of Solidworks, CATIA, Creo Pro, Unigraphics, Solid Edge, Inventor, there are many new software that are coming up regularly. Here, let's look at one such software Fusion 360 developed by Autodesk & launched as far back as 2013.

Fusion is rightfully named as it is the fusion of all the design, analysis, manufacturing and many more tools combined under one roof. We have generative design

Fusion 360 is free to download and use for the students. Its cloud-based design management makes it an essential tool to be used as a team. You can easily share your work with your mates and bypass the file transfer every time. Fusion saves each version, so if you want to go back to your initial work, you can.

Fusion allows you modelling in Freeform modelling & sculpting, Solid modelling, Parametric modelling and Mesh modelling, followed by simulation tests and fabrication using the CAM option. Autodesk also provides you with their free tutorials for every tool provided by them.
Fusion 360 consists of a timeline that captures commands used during the design process. You will be able to go back and edit any past operations without needing to update the entire design. The entire model will automatically update the historic timeline update point onwards. This is great when you want to iterate on a part only making small tweaks until your parts fit or perform just right.



Besides, many content creators, specifically those providing 3d printing related content are users of the software. This has made it quite easy to learn how to start rapid prototyping designs that would otherwise require entire redesigns every time a part would have to be modified.

It's being used by many startups now and an amazing tool added to your list. Overall it's developing software with more and more improvement every day and getting better for the user every time.

It is freely available for students to download & use. For any further help, contact the CAD Lab in charge.

: Happy Learning :

CADiMate Interactive Models in Onshape

Srikanth Rangdal, Assistant Professor

CADiMate = CAD + aniMate. This program aims at bringing the diagrams in the books to LIFE in an interactive form using CAD technologies. As a part of the program a lot of mechanisms will be modelled in CAD software so that students can interact with the same on their mobile devices.

Prepared by: Srikanth Rangal, Assistant Professor, Dept of Mech. Engg., MCET
Courses benefitted: Kinematics of Machines | Dynamics of Machines | Machine Design
Software used: Onshape Cloud CAD. Recently acquired by PTC - Parametric Technologies Corporation, The company that developed Creo
Book referred: S S Rattan (The design & geometric dimensions were chosen suitably.)

Features / Facilities: Students will be able to carry out below-mentioned activities on the 3D model.

1. Motion Analysis/visualisation of constrained mechanisms through animation.
2. The constraints are developed in accordance with the subject taught (Kinematics of Machines) unlike other CAD Packages like Solidworks, CATIA, Unigraphics, AutoCAD, Inventor, Pro/E or Creo Pro etc... which use constraint based assembly design.
3. Variation of Link dimensions to analyse how it would affect the motion.
4. Changing of the fixed-frame to obtain different inversions & analyse their motion.
5. Designing useful machines on top of the mechanism structures & target solutions to suitable problems.
6. Obtain the drawings of the parts with dimensional & tolerance information for fabrication.
7. Manufacture or Fabricate the mechanisms using suitable materials (preferably bio friendly).
8. The files can be accessed easily through the link given below on any of the devices mentioned below:

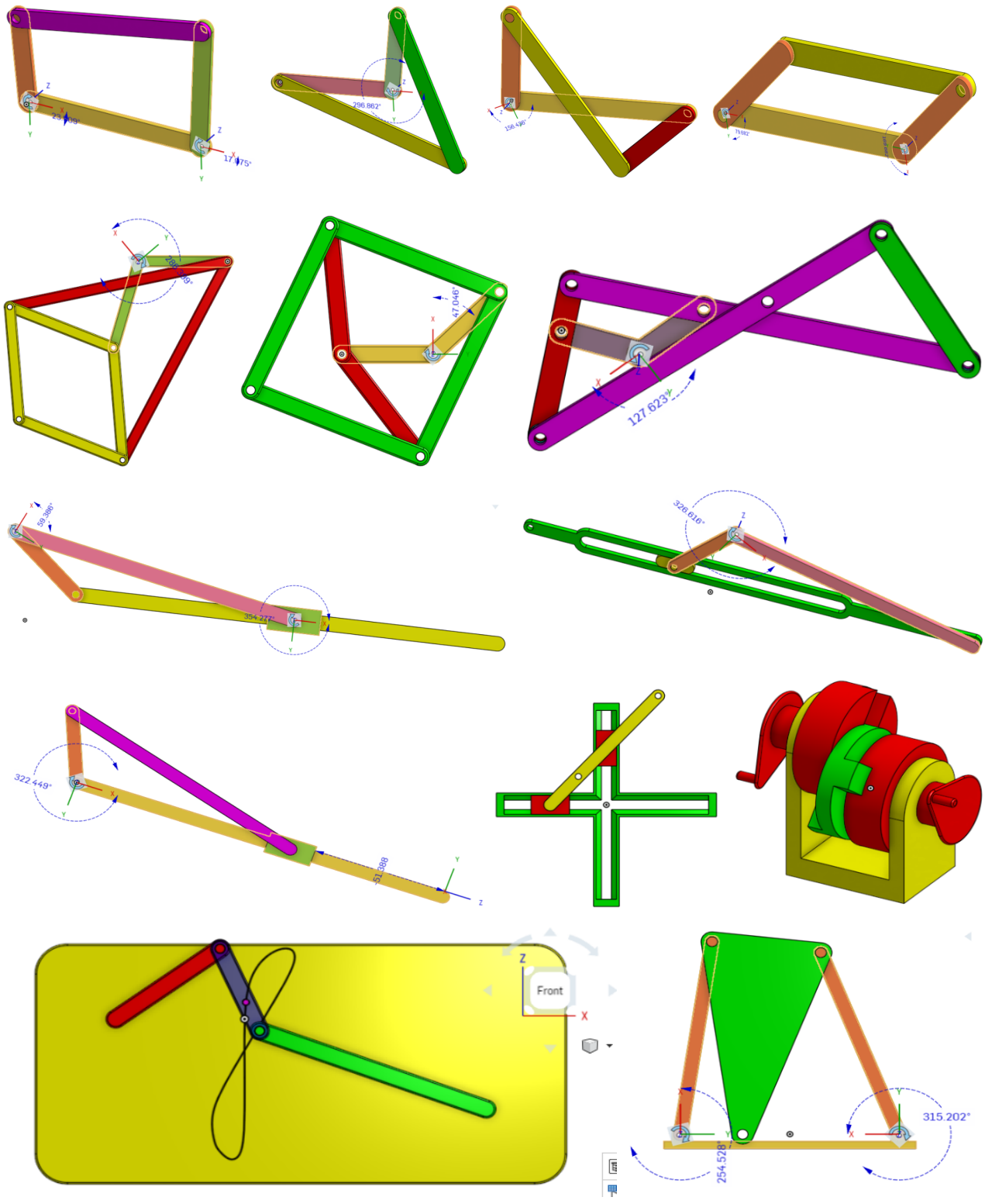
Devices Supported:

1. **Smartphones / Tabs** running **iOS** (iPhone & iPad) or **Android** or **Chrome OS**
2. **Desktops / Laptops** running **Macintosh**, **Windows**, **Chrome OS** or any variety of **Linux** with Chrome or other such **supported Browser**.

3. Sharing the file to students on mobile devices through the link. (Requirements: Android or iOS smartphone or desktop/laptop with supported browser)

Cost of equipment & software that student needs to access it

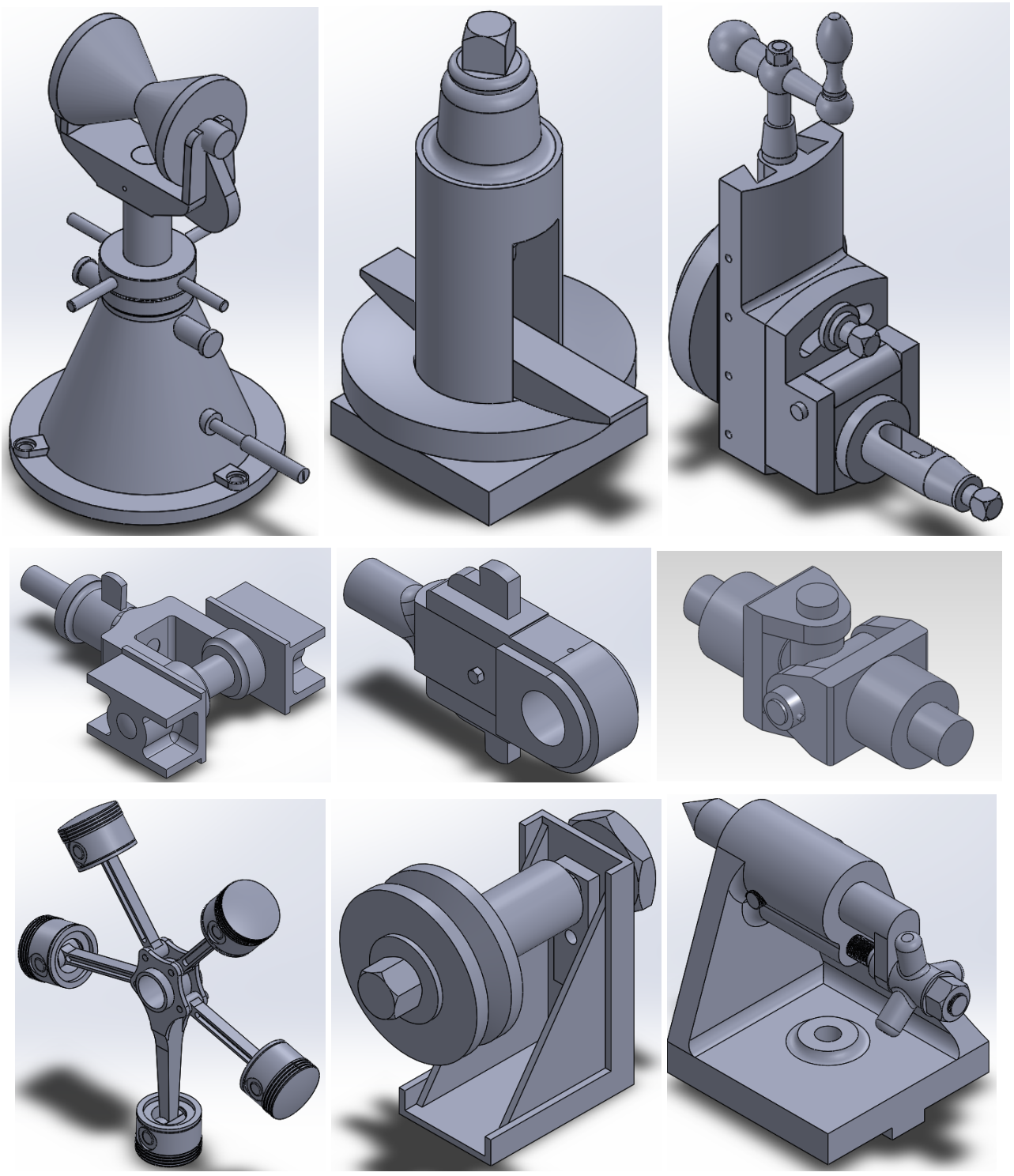
The educational version of OnShape is **FREE.** Any student can easily create the free account & then upgrade it to an educational version by filling the details of college & purpose of use. Any smartphone can work as good hardware.



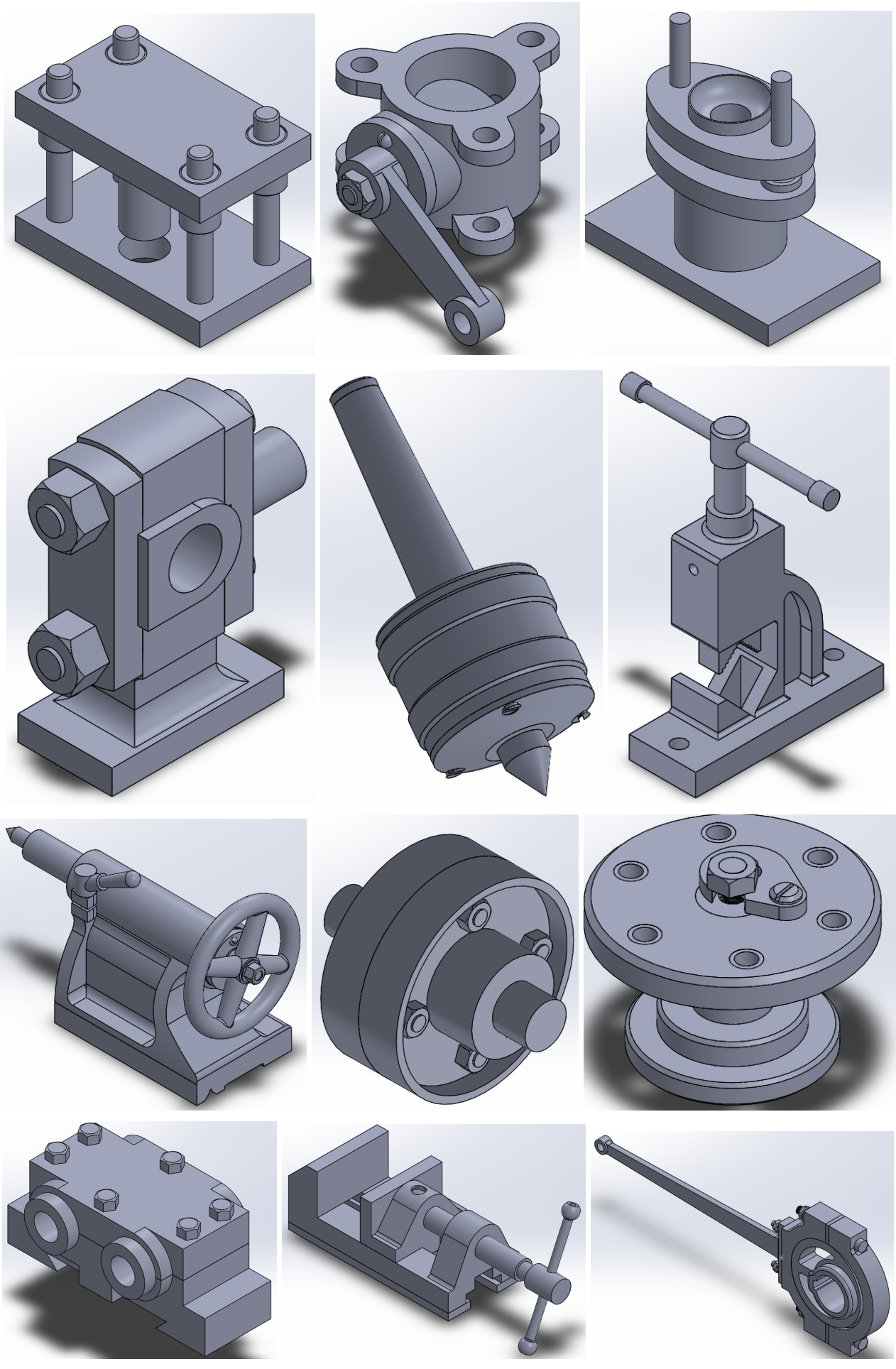
CAD Models for Machine Drawing using solidworks

Shashank, Student - II Year

The below CAD Models are submitted by Shashank. They have been modelled & assembled in Solidworks. All the files required for each of these models have been compressed & uploaded to Google Drive. The same will be made accessible to students on request.



If any more students are interested to build 3D models of their own we will help you. All submissions for consideration in future magazines can be done to Mr. Srikanth Rangdal, Incharge - CAD Lab.



Virtual CAD Models modelled in Autocad

Srikanth Rangdal, Assistant Professor

The below assemblies are modelled in AutoCAD. A total of sixteen (16) assemblies are now a part of the CAD model collection. More are in the works. Students are requested to make the best use of the same to understand the 3D visualisation of the parts you study about. Other details are mentioned below.

Software used: AutoCAD 2019, Student Version. Available free of cost from Autodesk website.

Book Referred: Drawings from the book "Machine Drawing" by "K L Narayana" were referred for modelling the assemblies. (Creative freedom used wherever the 2D diagrams are incompatible with available CAD features.)

Value to Education: Heavy 3D Machines are accessible to students via compatible Computer running AutoCAD where they get below mentioned features:

Features / Facilities: The students will be able to carry out below-mentioned activities on the 3D Assemblies.

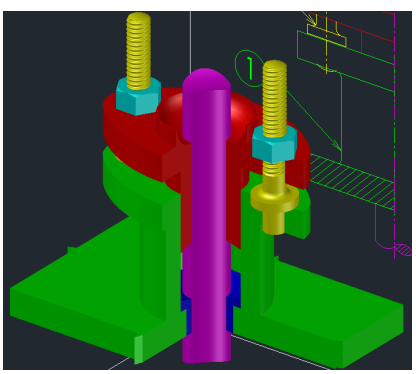
1. Interactively view 3D geometry of each part separately and in assembly.
2. Apply sections on each part to observe & learn from the sectional view & hatching.
3. Assembly gives information about how the parts are assembled & how it appears from different directions.
4. Detailed drawing of each part is also provided in the same file so they can practice modelling the same in the software of their choice.
5. Drawing/s of assembly with balloons is provided for reference along with complete Bill of Materials
6. Special Half sectional views or broken views provided wherever necessary that can be controlled by turning the layers ON/OFF for extra clear visualisation.
7. The files can be accessed easily through the link given below on any of the devices mentioned below:

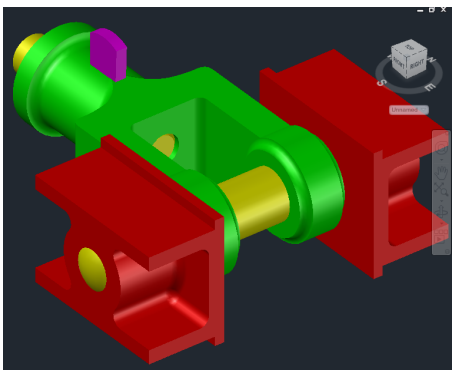
Devices Supported:

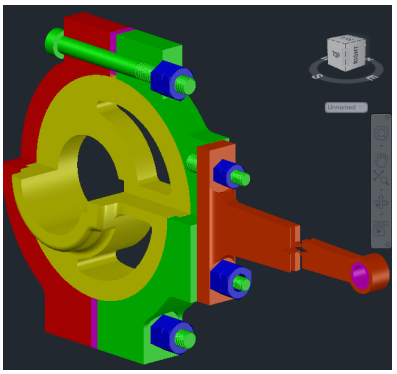
1. **Smartphones / Tabs** running **iOS** (iPhone & iPad) or **Android** with AutoCAD 360 app installed can be used to just view the model in 3D & control sections through layers.
2. **Desktops / Laptops** running **Macintosh**, **Windows** with Autodesk installed or any variety of **Linux** running compatible CAD freeware (models may need to be exported through compatible file format).

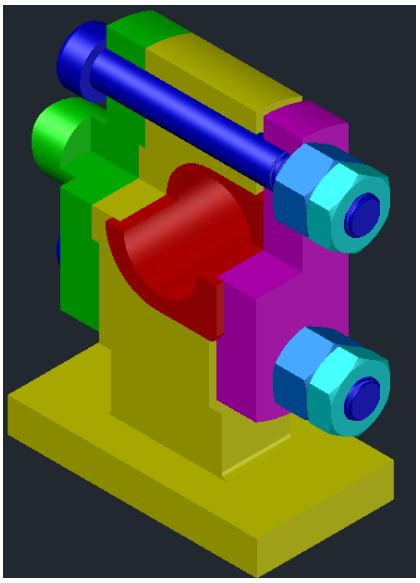
Cost of equipment & software that student needs to access it

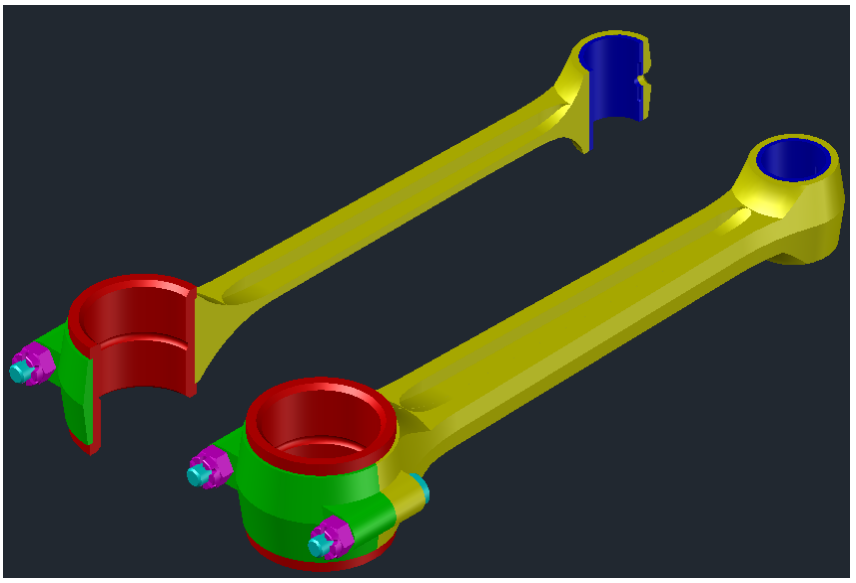
The student version of AutoCAD is **FREE** for 3 years**.** Hardware might need to be good enough to run the latest AutoCAD version. Older hardware can be used with older versions of AutoCAD to avoid performance issues. Alternatively, smartphones with AutoCAD 360 can work as good hardware.

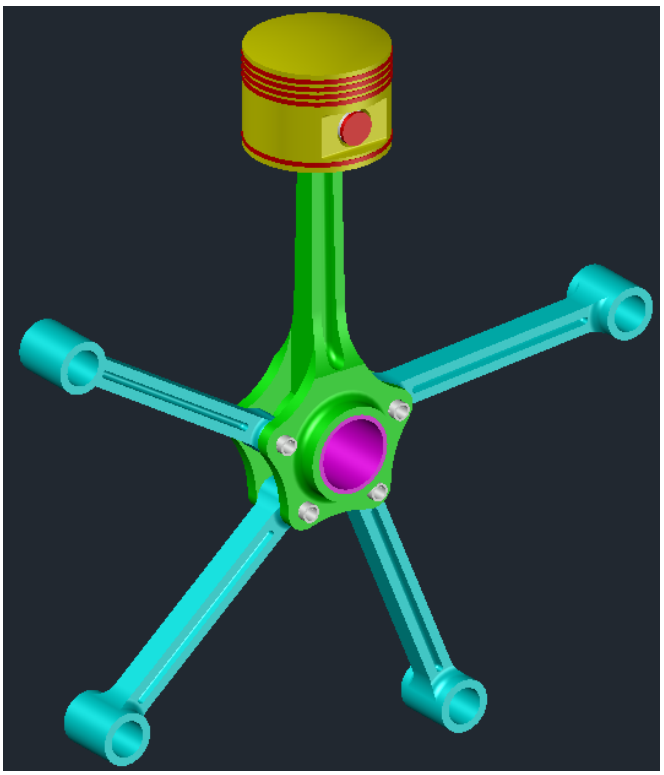

1

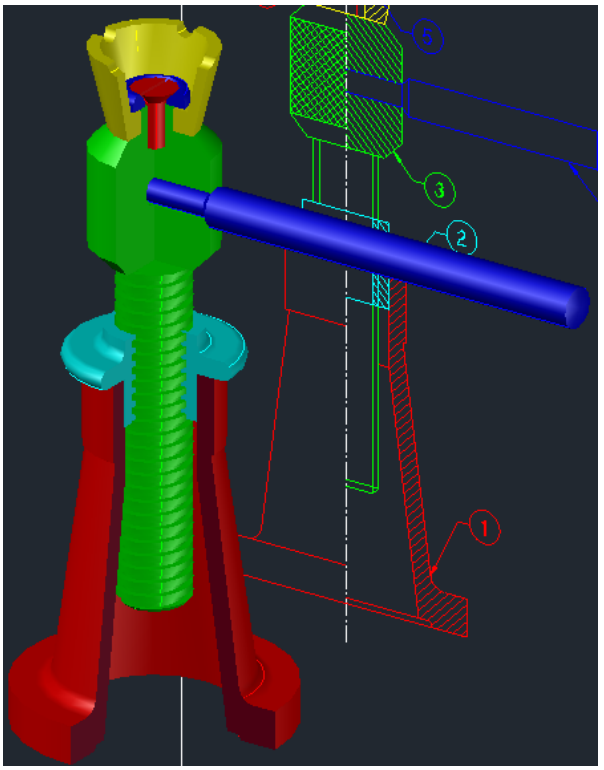


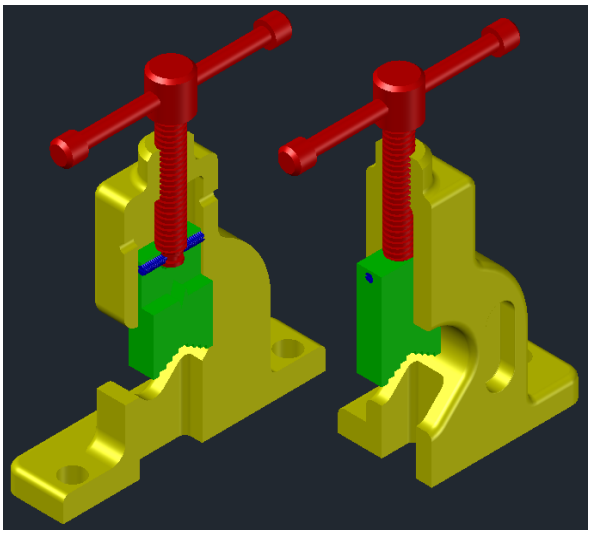


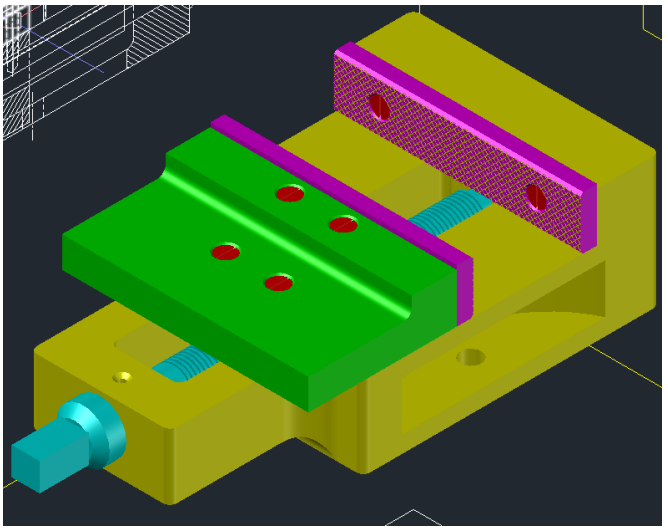


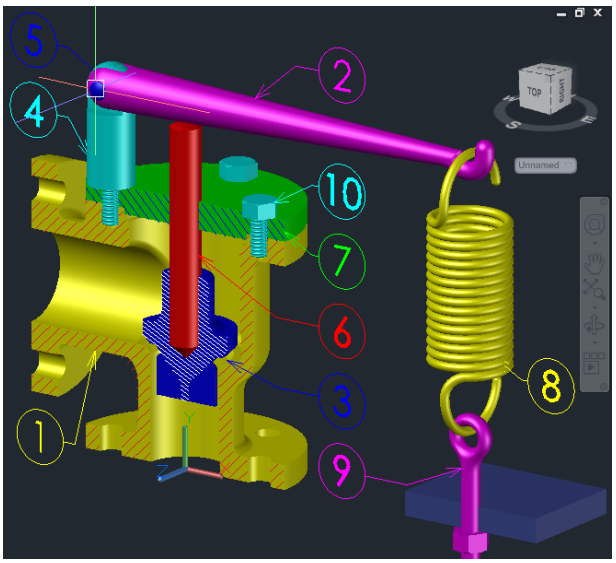


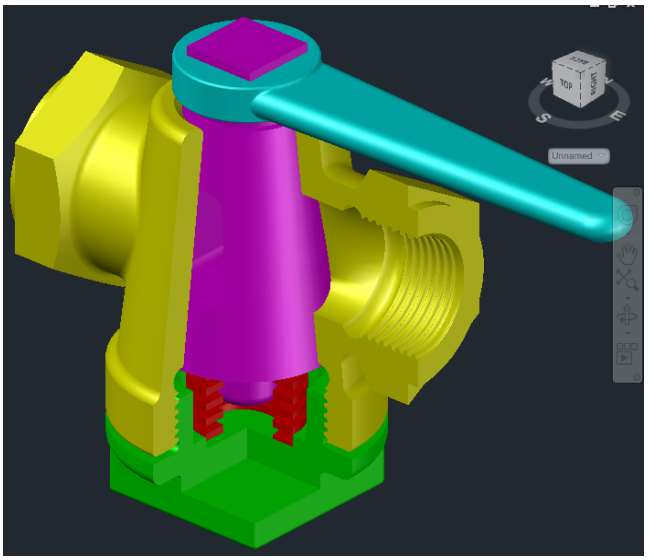


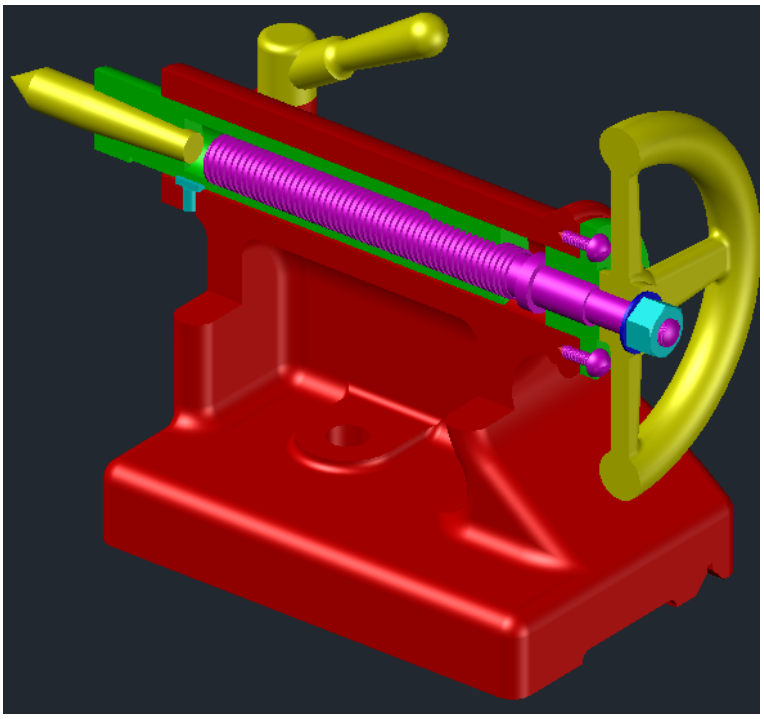

3
2
1

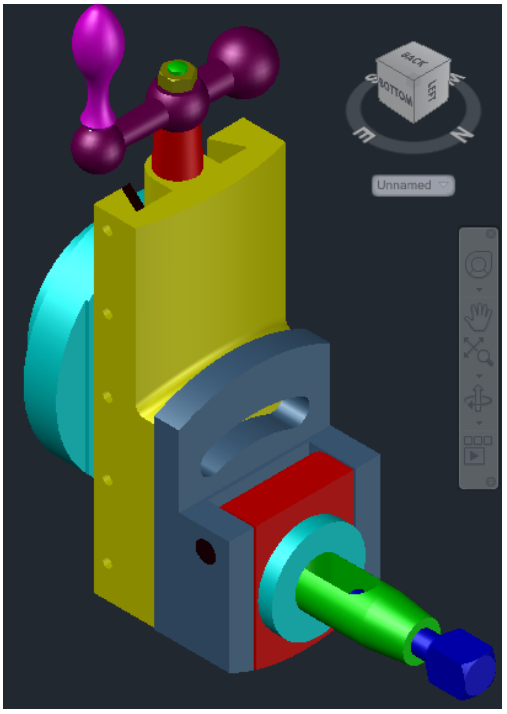





5
2
4
10
7
6
3
8
1
9







Educational Apps Development

Technology is greatly reducing the time & effort required in almost every work we do. A similar work is being carried out by our faculty Mr. Srikanth Rangdal. Read on to find what he has to say about the app.

These apps started out with the challenge of solving all the problems in problematic subjects given in ANY BOOK AROUND THE WORLD.

EDiMate was the first one in the line which generates graphical solutions to variable inputs given by users. EDiMate is an effort to bring to life all those lifeless & boring diagrams in the books to LIFE on digital screens. The app in its initial stages of development, provides solutions to projection of lines problems when true length & true inclinations are given.

Meaning of the App's Name: EDiMate = ED (Engineering Drawing) + aniMate (giving LIFE).

Coding Languages used: HTML & Javascripts were used to code the user interface & programming to calculate geometric information from given data & display the results graphically using canvas.

Websites referred: https://www.w3schools.com/ & https://developer.android.com

The app development platform used: Android Studio

Features / Facilities:

EDiMate provides you with the ability to play around with different inputs & get fully drawn diagrams along with neatly written steps for a question that you can choose. Right now the app can solve Projection of Lines problems.

EDiMate also contains a link to around 52 previous JNTU papers on the subject. Finally, it also has some videos from our YouTube Channel - bit.ly/cadmate.

Usage Scenarios:

CLASSIC STYLE.

As soon as you load the app you're presented with a problem with some preset values. Press the DRAW BUTTON & the diagram with complete steps will be generated. Classic book style!

EXPERIMENT WITH DIFFERENT INPUTS.

In the input text area, you can change the values & press DRAW BUTTON. The solution to the changed values will be drawn in an instant. Even steps and the question will be changed accordingly.

PLAY THE STEPS

Use the steps buttons to jump to any step you want & move forward or backwards as you please till you understand the steps to draw. We are working on adding animations as well. So stay tuned.

READ THE STEPS

We have taken great care to write steps that don't miss any point. Practice by following the steps generated until you understand the problem & start solving problems on your own.

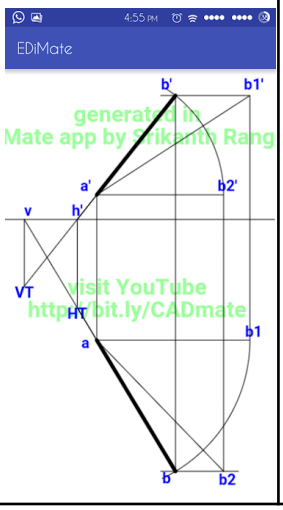
TEST YOUR SKILL

Use the "Change Values" button to generate questions for practice. After drawing it on the sheet,

press the DRAW BUTTON & compare your sheet with our solution to find mistakes. To avoid them in future & improve yourself of course!

Devices Supported:

- The app can run on **Smartphones / Tabs** running **Android** or **Chrome OS**
- The Webpage, however, can run on any web browser that supports javascript on **Desktops / Laptops** running **Macintosh**, **Windows**, **Chrome OS** or any variety of **Linux** with Chrome or other such **supported Browser**.

Sl No	Apps developed, platform & Subjects	Name of the Faculty	Picture	Link
1.	EDiMate For Android Smartphones Engineering Graphics	Srikanth Rangdal		*Link to install the app:* https://play.google.com/store/apps/details?id=com.cadimate.edimatepro *Youtube explanation Link:* https://www.youtube.com/watch?v=fKOsNCEgNXk

CREATIVE CORNER

TARANA (DUAIYA)

BY : A. T. MOHAMMED YAKOOB (ASAD)

Patta Patta Yahan Lahlahata Rahe
Har Parinda Yahan Chahchahata Rahe
Mera Hindustan Jagmagata Rahe

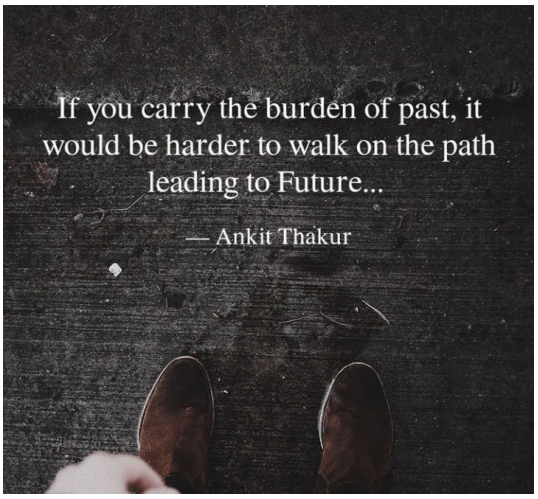
Des Mein Ab Kisi Ko Koi Gham Na Ho
Ab Kisi Maa Ka Aanchal Kabhi Nam Na Ho
Mera Hindustan Muskurata Rahe

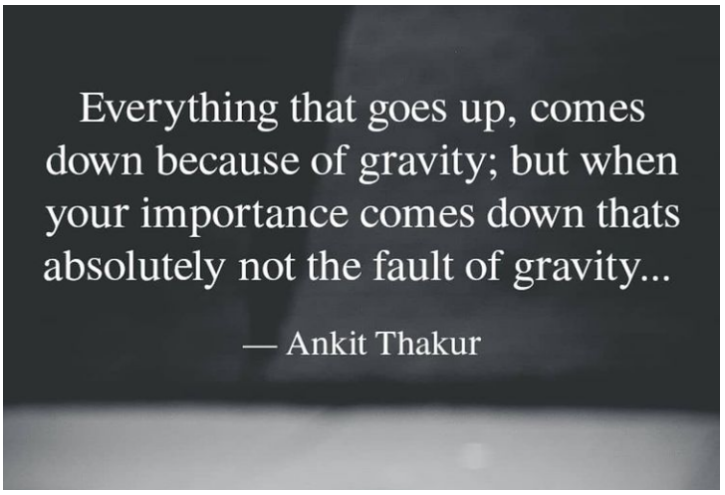
Is Ke Parbat Yonhi Sar Uthaye Rahein
Is Ki Dharti Mein Gauhar Samayein Rahein
Mera Bharat Yonhi Sab Ko Bhata Rahe

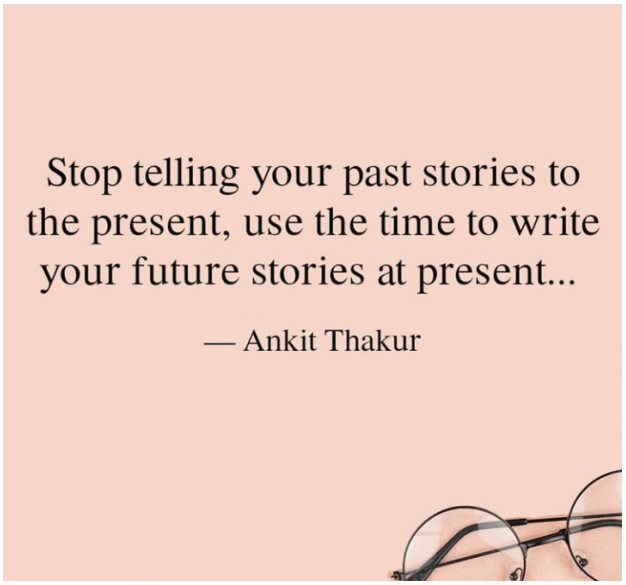
Eteqadat Par Na Fasadat Hon
Mulk Se Qatm Ab Imteyazat Hon
Apna Haq Ab Har Ek Fard Pata Rahe

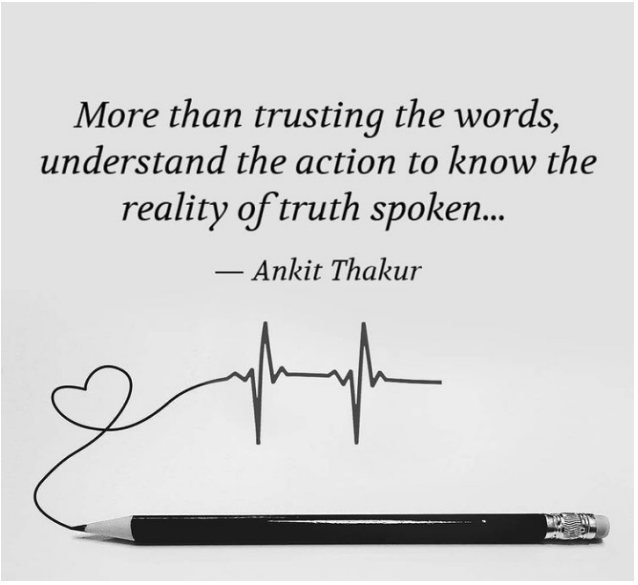
Koi Tendulkar Sania Ho Koi
Koi Satya Bane Saina Ho Koi
Bachcha Bachcha “Asad” Gul Khilata Rahe

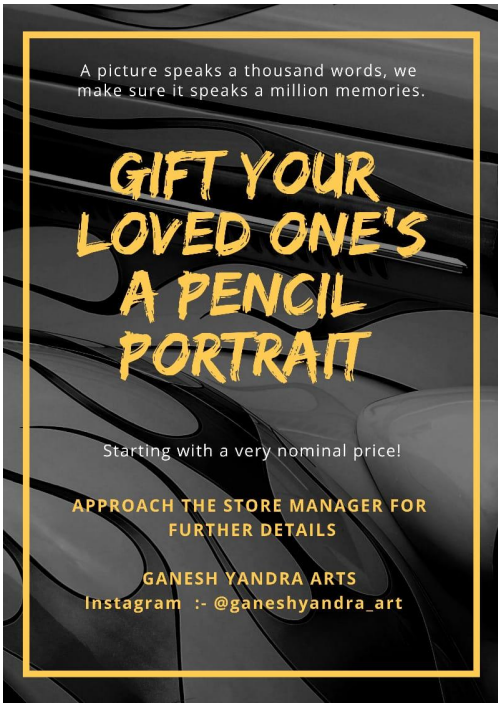
GRAPHIC EDITING











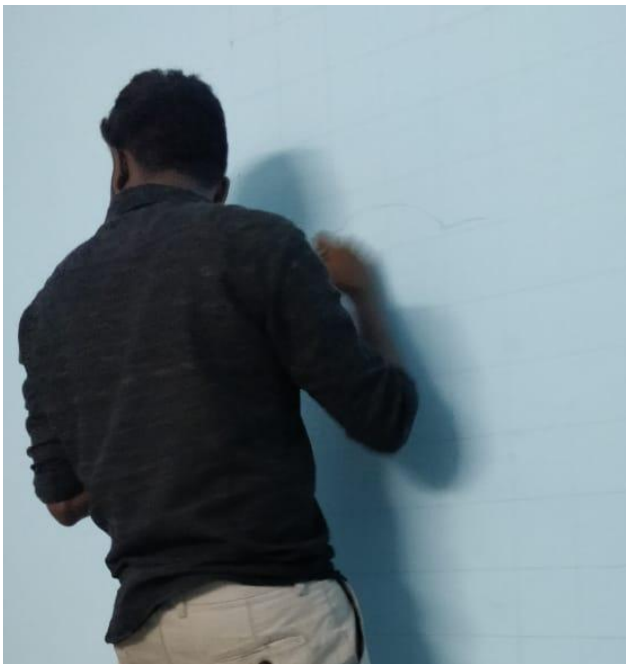
Ganesh Yandra
II Year Student

I have been sketching artworks for a long time. I just use pencil shading to draw life sized sketches of real people. It started out as a hobby but on suggestion from one of my friends, I started doing it on contract basis as well.

This skill has helped me grow & stand on my own feet while keeping my creativity alive while going through the hectic schedule of engineering studies.

I am happy to provide some of my samples for publication in the department magazine. Hope you all like it.

Instagram handle: @ganeshyandra_arts



Photography

Name - R. Shashank
Roll no - 160717736081
Class/sem :-4th/IIV
Mobile no - 9652606578

Social Activity - Rally in support of the Surgical Strike

Mamudala Nandukumar, 160716736011


దెబ్బకు ఠా...
ముష్కరుల ముఠా...


ABHINANDAN...
in the MIG-21
Terror Camps
Demolition